

ORDINANCE O-2007- 53

A BILL FOR AN ORDINANCE ENACTING A NEW CHAPTER 16.03 OF THE
LONGMONT MUNICIPAL CODE CREATING THE GREEN BUILDING REQUIREMENTS

THE COUNCIL OF THE CITY OF LONGMONT, COLORADO, ORDAINS:

Section 1

The Council enacts a new Chapter 16.03 of the Longmont Municipal Code to read as follows:

GREEN BUILDING

Sections

16.03.010 Purpose.

16.03.020 Building Permits – Green Building Points Required.

16.03.030 Green Points Calculations.

16.03.010 Purpose.

The purpose of the Green Points program is to encourage cost-effective and sustainable residential building methods, conservation of fossil fuels, water, and other natural resources, recycling of construction materials, reducing solid waste and improved indoor air quality.

16.03.020 Building Permits – Green Points Required.

Schedule For Green Points: To qualify for a residential building permit, the applicant must meet the green points requirements in Table 1.

Table 1
Points Required

<i>Project Description</i>	<i>Thresholds</i>	<i>Points Required</i>
<i>New construction</i>	<i>Up to 2000 sq. ft.</i>	<i>30 points</i>
	<i>2,001 to 3,500 sq. ft.</i>	<i>40 points</i>
	<i>3,501 sq. ft. or greater (each additional 50 sq. ft.)</i>	<i>40 points, plus 1 point for each additional 50 sq. ft. area up to a maximum of 100% of all available Green Points</i>
<i>Interior remodel</i>	<i>300 to 1,000 sq. ft.</i>	<i>6 points</i>
	<i>1,001 to 2,000 sq. ft.</i>	<i>10 points</i>
	<i>2,001 sq. ft. or greater</i>	<i>15 points</i>
<i>Additions</i>	<i>500 to 1,000 sq. ft.</i>	<i>15 points</i>
	<i>1,001 to 2,500 sq. ft.</i>	<i>30 points</i>
	<i>2,501 sq. ft. or greater (each additional 50 sq. ft.)</i>	<i>45 points, plus 1 point for each additional 50 sq. ft. area up to a maximum of 100% of all available Green Points</i>

16.03.030 Green Points Calculations. *Green points are calculated based on the following schedules.*

A. *Energy Code Measures. The International Energy Conservation Code (IECC) requires minimum measures of energy conservation for new buildings, additions, and remodels. Green points are awarded in Table 2 for employing energy efficiency above the required minimums in each of the categories specified in the IECC. The applicant needs to complete an IECC form,*

available from the building official, and then calculate the green points awarded for each incremental increase above the IECC.

Table 2
Energy Code Measures/Green Points

Green Points	Green Points
Window Glass U-factor	Basement Insulation
U-0.34 1	R-13 1
U-0.33 2	R-15 2
U-0.30 4	R-19 3
U-0.28 or less 6	R-21 4
	R-24 or greater 5
Wall Insulation	Slab Insulation
R-21 1	R-11 1
R-24 2	R-12 2
R-26 3	R-13 3
R-28 or greater 4	R-15 4
Ceiling Insulation	Crawl Space Insulation
R-42 1	R-22 1
R-46 2	R-24 2
R-48 or greater 3	R-25 or greater 3
Floor Insulation over Garage	Furnaces and Boilers
R-24 1	Furnaces
R-26 2	90% AFUE 2
R-28 or greater 3	94% AFUE 3
	98% AFUE 4
	2 Stage Furnace 5
Cantilever or Floor over outside	Air Conditioning
R-40 1	No A.C. 2
R-42 2	14 SEER 2
R-44 or greater 3	16 SEER 4
	Two Stage A.C. 6

B. Construction/Demolition and Use of Recycled Materials: Green points are awarded as follows:

1. 3 points - deconstruction plan submitted with permit application (additions, remodels, or scrape-offs only).

2. The following schedule applies to construction debris and materials:

5 points - 75 percent clean wood waste recycled (no painted or treated wood is eligible).

5 points - 100 percent metal recycled.

5 points - 90 percent cardboard recycled.

5 points - deconstruction materials donated to a reseller.

3. Applicants can earn points by using recycled materials according to the following schedule:

5 points - two of the items below.

7 points - three of the items below.

9 points - four of the items below.

a. recycled content carpeting.

b. recycled plastic or non-CCA (chromated copper arsenate) treated deck materials.

c. recycled content sheathing.

d. recycled content, fiber cement or Forest Stewardship Council (FSC) certified siding.

e. recycled content roofing.

C. Land Use and Water Conservation.

1. Applicants earn 1 point for each tree planted above the minimum required by Section 15.05.090 Longmont Municipal Code, to a maximum of six extra trees.

2. Applicants can earn points by selecting xeriscape measures according to the following schedule:

1 point - two of the items below.

2 points - three of the items below.

3 points - four of the items below.

a. Reduction of turf areas to a minimum. No more than 25% of landscaped area can be covered with high water demand turf, such as Kentucky bluegrass. For Longmont's climate more appropriate turf includes, Turf-Type

1 *Tall Fescue, and Turf-Type Buffalo Grass. Certification of turf type and water*
2 *conservation traits to be included in application.*

3 *b. All planting beds mulched with wood chips at least 2" deep (except*
4 *desert plantings).*

5 *c. Appropriate use of low-water-demand plants. All plants to be*
6 *grouped by water needs. 75% of the landscape must use low or moderate water*
7 *demand plants (Longmont Land Development Code, 15.05.090).*

8 *d. Zoned irrigation system. Irrigation system must be zoned to*
9 *deliver different amounts of water appropriate to the different plant zones.*

10 *i. High water zones are limited to 25% of the total*
11 *landscaped area. High water zones include high-water demand plants like*
12 *Kentucky Bluegrass irrigated with sprinklers.*

13 *ii. High-water zones should have irrigation controls that*
14 *include timed devices and soil moisture sensors, and be surrounded on 75% of the*
15 *perimeter with other water zones; no high-water zones should be immediately*
16 *adjacent to large hardscapes such as driveways or streets, and for efficient*
17 *irrigation, they should not be installed in areas less than 15 feet wide.*

18 *iii. The remainder of the landscape should include low to*
19 *moderate water demanding plants, and should be irrigated with drip irrigation,*
20 *bubbler, or micro-spray systems. The landscape should be designed so that, at*
21 *maturity, not more than 10% of the landscaped area is exposed non-plant*
22 *materials, e.g., rock or wood-chip mulch beds.*

23 *3. 3 points - drip or sub-surface irrigation installed.*

24 *D. Framing.*

25 *1. 3 points – modular or standard dimensioning.*

26 *2. 5 points - structural alternatives to wood.*

27 *3. 3 points -incorporate optimal value engineering (OVE) framing*
28 *techniques.*

29 *4. 2 points - oriented strand board in subfloors.*

30 *5. 2 points – oriented strand board (OSB) or FSC certified plywood*
31 *in wall sheathing.*

- 1 6. 2 points - finger-jointed or engineered studs used for wall framing.
- 2 7. 5 points - FSC certified sustainably harvested lumber used for
- 3 framing.
- 4 8. Green points for using engineered lumber used in structural
- 5 framing:
- 6 1 point - engineered roof trusses or wood "I" joists for rafters.
- 7 1 point - wood "I" joists or floor framing.
- 8 2 points - use engineered products to replace 2x10s and 2x12s in
- 9 beams and headers.
- 10 9. Green points for using structural insulated panels (SIPs) for
- 11 exterior walls and roofs:
- 12 4 points - SIPs for exterior walls.
- 13 4 points - SIPs for roofs.
- 14 E. Plumbing.
- 15 1. Green points for installing tankless hot water heater(s) according
- 16 to the following schedule:
- 17 5 points - one tankless water heater.
- 18 3 points - each additional tankless hot water heater.
- 19 2. 3 points - on-demand water switch.
- 20 F. Electrical.
- 21 1. Green points for installing compact fluorescent light (CFL) bulbs
- 22 in light fixtures according to the following schedule:
- 23 1 point - 4 CFL bulbs.
- 24 2 points - 8 CFL bulbs.
- 25 3 points - 12 CFL bulbs.
- 26 2. Green points for installing an energy efficient dish-washer, clothes
- 27 washer, refrigerator or freezer. "Energy Efficient" appliance designation is
- 28 indicated on the Department of Energy-required energy label. Standards are
- 29 defined by the Energy Policy Act of 1992. Applicants can earn one point for each
- 30 appliance up to a total of four points.

3. Green points for installing efficient light controls according to the following schedule:

1 point - 2 control devices.

2 points - 4 control devices.

4. 1 point – clothesline (where allowed by subdivision regulations).

G. Windows and Insulation.

1. 2 points - no metal windows installed in basements (remodels and additions only).

2. Green points for upgrading single-pane windows (remodels and additions only) according to the following schedule:

0.5 point/window - double-glazed (Min U-value-0.35).

1 point/window- double-glazed with low-e coating (Min U-value-0.34).

1.5 points/window - double-glazed with argon/heat mirror (Min U-value-0.33).

3. 2 points - wall insulation is 80% recycled material or wet spray insulation.

4. 2 points - ceiling insulation is 80% recycled material or wet spray insulation.

5. 2 points - install recycled content, formaldehyde-free fiberglass insulation.

6. 5 points - existing ceiling insulated to R-38 or capacity for fixed space (remodels only).

7. 7 points - existing walls insulated to capacity or rigid insulation added to exterior (remodels only).

H. Heating, Ventilation and Air Conditioning.

1. 5 points - natural cooling.

2. 2 points - attic fan.

3. 3 points - hydronic baseboard heat.

4. 2 points - vapor permeable infiltration barrier.

5. Green points for attaining an air infiltration rate below specified

1 levels (production homes only; natural air changes per hour—NACH— must be
2 determined by an energy rater). The following schedule applies:

3 2 points: 0.30 NACH.

4 4 points: 0.25 NACH.

5 6 points: 0.20 NACH.

6 8 points: less than 0.15 NACH.

7 6. 2 points - whole-house fan. The fan must meet the following:
8 Minimum Fan Size cubic feet per minute (CFM) = Volume of House x 4-5 air
9 changes/hour x 1/60, Volume of house = square footage of house x average
10 ceiling height throughout house.

11 7. 8 points - air to air heat exchanger (heat recovery ventilation).

12 8. 10 points - convert electric resistance heat to gas (additions and
13 remodels only).

14 9. 4 points - replace electric water heater with a gas water heater
15 (additions and remodels only).

16 10. 1 point - air destratification system.

17 11. 6 points - evaporative cooling.

18 I. Solar.

19 1. 10 points - solar hot water heating system installed.

20 2. Green points for installing passive solar space heating according
21 to the following schedule:

22 6 points - Glazing of the protected south wall surface adequate to
23 provide passive solar heating for 20% of the building.

24 12 points - Glazing of the protected south wall surface adequate to
25 provide passive solar heating for 40% of the building, but only if designed in
26 conjunction with an appropriately sized thermal mass so as not to affect adversely
27 cooling loads.

28 20 points - Glazing of the protected south wall surface adequate to
29 provide passive solar heating for 60% of the building, but only if designed in
30 conjunction with an appropriately sized thermal mass so as not to affect adversely
31 cooling loads.

3. 2 points - Active Solar Pre-plumbing.
4. Green points for installing Active Solar Space Heating according to the following schedule:
 - 8 points - 30 to 39% solar heating.
 - 12 points - 40 to 49% solar heating.
 - 16 points - 50 to 59% solar heating.
 - 20 points - 60% or greater solar heating.
5. 20 points - solar-generated electricity.
- J. Indoor Air Quality and Interior Finishes.
 1. 3 points - Install infrastructure to support current or future alternative fuel vehicle use.
 2. Green points for installing Sealed Combustion Gas Furnace/Boiler & Water Heater according to the following schedule:
 - 5 points - one appliance.
 - 10 points - both appliances.
 - 5 points - separate room for appliances.
 3. 3 points - detached garage or exhaust fan on timer installed in attached garage.
 4. 1 point - low volatile organic compound (VOC) interior paint.
 5. 2 points - low solvent construction adhesives.
 6. 3 points - low-toxic, water-based wood and floor finishes used.
 7. 2 points - carbon monoxide detector installed.
 8. 5 points - elimination of all particleboard inside envelope of the house.
 9. 3 points - elimination of all medium density fiberboard made with urea-formaldehyde.
 10. 2 points - all exposed particleboard and medium density fiberboard (MDF) sealed with three coats of low VOC, latex paint.
 11. 3 points - alternative no-formaldehyde products substituted for particleboard.

1 K. Innovative Measures.

2 1. New green products and techniques (measures) are continually
3 introduced. This section is meant to accommodate added and improved green
4 building measures.

5 2. Applicants can earn 10 points, plus a maximum of 20% of the total
6 required points, for new green building measures. The chief building official will
7 determine these points by considering the extent to which the measure is equal to
8 or greater than the existing green point measure it replaces.

9 Section 2

10 To the extent only that they conflict with this ordinance, the Council repeals any
11 conflicting ordinances or parts of ordinances. The provisions of this ordinance are severable, and
12 invalidity of any part shall not affect the validity or effectiveness of the rest of this ordinance.

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14 Introduced this 12th day of June, 2007.

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16 Passed and adopted this 10th day of July, 2007.

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24 ATTEST:

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26 Valeria R. Shatt
27
28 CITY CLERK



29
30 NOTICE: THE COUNCIL WILL HOLD A PUBLIC HEARING ON THIS ORDINANCE AT
31 7:00 P.M. ON THE 10th DAY OF July, 2007, IN THE
32 LONGMONT COUNCIL CHAMBERS.

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34
35 APPROVED AS TO FORM:

36
37
38 James W. Roenb
39 DEPUTY CITY ATTORNEY

40
6/12/07
DATE

1
2
3 PROOFREAD

6-12-07
DATE

4
5 APPROVED AS TO FORM AND SUBSTANCE:

6
7 Brad S. del
8
9 ORIGINATING DEPARTMENT

6/14/07
DATE

10
11 File: 6068